

CLAIMS

1. Starting system (1) for internal combustion engine comprising pressurized fuel supply means (3), accumulator means (2) supplied with pressurized fuel by said supply means, and at least one injection means (4) supplied with fuel by the accumulator means (2), a pressurized fuel storage device (5) supplied thanks to the pressure existing in said accumulator means and adapted to supply said stored fuel at start-up, the storage device (5), in direct communication with said accumulator means, comprising at least one storage means (12) and control means (13), characterized in that said control means comprise 10 electromagnetic opening means (17), elastic closing means (16), and an actuator means (24) controlled selectively by said electromagnetic means and said elastic means so as to limit the energy to be supplied to control said starting system to make it possible for said engine to start up more rapidly.
2. System (1) according to claim 1, characterized in that the electromagnetic means 15 (17) comprise a coil (23) generating a magnetic field adapted to move the actuator means (24) and whose inner diameter forms a tunnel between said at least one storage means and the accumulator means (2).
3. System (1) according to claim 1 or 2, characterized in that the elastic means (16) comprise a spring (18), a hollow plate (21) fixed between said electromagnetic means and 20 said storage means, and a ball (19) adapted to block the hollow of said plate and integral with said spring, enabling the communication between the accumulator means (2) and said at least one storage means, depending on the relative pressures between the two.

4. System (1) according to claim 3, characterized in that the actuator means (24) comprises a first rod (26) located essentially on the central axis of said tunnel formed by the coil (23), a plate (25) fixed essentially perpendicularly to an extremity of said first rod, and a second rod (27) that, as an extension of the other extremity of the first rod (26), is in contact 5 with said ball and has a diameter smaller than said hollow of the plate (21), making it possible to follow or to initiate the movement of said ball.

5. System (1) according to claim 4, characterized in that the plate (25) further comprises at least one groove (28) adapted to let fuel pass in its hollow when said plate is against said electromagnetic means.

10 6. System (1) according to one of the preceding claims, characterized in that the supply means (3) comprise a pump (6) supplying fuel to said accumulator means and an anti-backflow valve (8) authorizing a fuel circulation direction only from the pump toward said accumulator means.